Package 'dobin'

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R topics documented:

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autoplot.dobin   *Plots the first two components of the dobin space.*

Description

Scatterplot of the first two columns in the dobin space.

Usage

```
## S3 method for class 'dobin'
autoplot(object, ...)
```

Arguments

object   The output of the function 'dobin'.

...   Other arguments currently ignored.

Value

A ggplot object.

Examples

```
X <- rbind(
  data.frame(x = rnorm(500),
             y = rnorm(500),
             z = rnorm(500)),
  data.frame(x = rnorm(5, mean = 10, sd = 0.2),
             y = rnorm(5, mean = 10, sd = 0.2),
             z = rnorm(5, mean = 10, sd = 0.2))
)
dob <- dobin(X)
autoplot(dob)
```

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dobin   *Computes a set of basis vectors for outlier detection.*

Description

This function computes a set of basis vectors suitable for outlier detection.

Usage

```
dobin(xx, frac = 0.95, norm = 1, k = NULL)
```

Arguments

xx	The input data in a dataframe, matrix or tibble format.
frac	The cut-off quantile for Y space. Default is 0.95.
norm	The normalization technique. Default is Min-Max, which normalizes each column to values between 0 and 1. norm = 0 skips normalization. Other values of norm defaults to Median-IQR normalization.
k	Parameter k for k nearest neighbours with a default value of 5% of the number of observations with a cap of 20.

Value

A list with the following components:

rotation	The basis vectors suitable for outlier detection.
coords	The dobin coordinates of the data xx.
Yspace	The The associated Y space.
Ypairs	The pairs in xx used to construct the Y space.
zerosdcols	Columns in xx with zero standard deviation. This is computed only if the number of columns are greater than the number of rows.

Examples

```
# A bimodal distribution in six dimensions, with 5 outliers in the middle.
set.seed(1)
x2 <- rnorm(405)
x3 <- rnorm(405)
x4 <- rnorm(405)
x5 <- rnorm(405)
x6 <- rnorm(405)
x1_1 <- rnorm(mean = 5, 400)
mu2 <-  0
x1_2 <- rnorm(5, mean=mu2, sd=0.2)
x1 <- c(x1_1, x1_2)
X1 <- cbind(x1,x2,x3,x4,x5,x6)
X2 <- cbind(-1*x1_1,x2[1:400],x3[1:400],x4[1:400],x5[1:400],x6[1:400])
X <- rbind(X1, X2)
labs <- c(rep(0,400), rep(1,5), rep(0,400))
dob <- dobin(X)
autoplot(dob)
```

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